WHAT IS CLAIMED IS

1. An isolated nucleic acid expressing a protein having CHD activity comprising a member selected from the group consisting of:

(a) a polynucleotide which encodes a polypeptide of SEQ ID NO: 2, 6, 10, 14, 18, 22, 26, 30, 34 or 38;

(b) a polynucleotide amplified from a plant nucleic acid library using the primers of SEQ ID NOS: 3 and 4; 7 and 8; 11 and 12; 15 and 16; 19 and 20; 23 and 24; 27 and 28; 31 and 32; 35 and 36; or 39 and 40 or primers determined by using Vector nti Suite, InforMax Version 5.

(c) a polynucleotide comprising at least 60 contiguous bases of SEQ ID NO: 1, 5, 9, 13, 17, 21, 25, 29, 33, or 37;

(d) a polynucleotide having at least 75% sequence identity to SEQ ID NO: 1, 5, 9, 13, 17, 21, 25, 29, 33, or 37, wherein the % sequence identity is based on the entire sequence of the above sequences and is determined by GAP 10 analysis using default parameters;

(e) a polynucleotide comprising at least 75 nucleotides in length which hybridizes under high stringency conditions to a polynucleotide having the sequence set forth in SEQ ID NO: 1, 5, 9, 13, 17, 21, 25, 29, 33, or 37;

(f) a polynucleotide having the sequence set forth in SEQ ID NO: 1, 5, 9, 13, 17, 21, 25, 29, 33, or 37; and

(g) a polynucleotide complementary to a polynucleotide of (a) through (f).

2. The isolated nucleic acid of claim 1, wherein the polynucleotide is from a monocot or dicot.

3. A vector comprising at least one nucleic acid of claim 1.

4. An expression cassette comprising at least one nucleic acid of claim 1 operably linked to a promoter.

5. A host cell containing at least one expression cassette of claim 4.

6. The host cell of claim 5, wherein the host cell is a plant cell.

7. A transgenic plant comprising at least one expression cassette of claim 4.

8. An isolated protein having CHD activity comprising a member selected from the group consisting of:

(a) a polypeptide comprising at least 20 contiguous amino acids of SEQ ID NO: 2, 6, 10, 14, 18, 22, 26, 30, 34, or 38;

(b) a polypeptide comprising at least 80% sequence identity to SEQ ID NO: 2, 6, 10, 14, 18, 22, 26, 30, 34, or 38, wherein the % sequence identity is based on the entire sequence of the above sequences and is determined by GAP 10 analysis using default parameters;

(c) a polypeptide encoded by a nucleic acid of claim 1;

(d) a polypeptide having the sequence set forth in SEQ ID NO: 2, 6, 10, 14, 18, 22, 26, 30, 34, or 38.

9. An isolated ribonucleic acid sequence encoding a protein of claim 8.

10. A method for modulating CHD activity in a host cell, comprising:

(a) transforming a host cell with at least one expression cassette of claim 4 and

(b) growing the transformed host cell under conditions sufficient to modulate CHD activity in the host cell.

11. The method of claim 10, wherein the host cell is a plant cell.

12. The method of claim 11, wherein the plant cell is from a monocot or a dicot.

13. A plant produced by the method of claim 12.

14. The method of claim 10, wherein CHD activity is decreased.

15. A method for transiently modulating the level of CHD activity in host cells comprising introducing at least one CHD nucleic acid of claim 1 to produce a transformed cell and growing the transformed host cell under conditions sufficient to express the at least one CHD nucleic acid in an amount sufficient to modulate CHD activity in the host cell.

16. A method for transiently modulating the level of CHD activity in host cells comprising introducing at least one polypeptide of claim 8 to produce a transformed cell and growing the transformed host cell under conditions sufficient to modulate CHD activity in the host cell.

17. A method for enhancing tissue culture response in a host cell comprising introducing into the host cell at least one CHD polypeptide or at least one CHD polynucleotide to produce a transformed host cell and growing the host cell.

18. A method for inducing somatic embryogenesis in a host cell comprising introducing into a responsive host cell at least one CHD polypeptide or at least one CHD polynucleotide to produce a transformed host cell and growing the transformed host cell to produce a transformed embryo.

19. A method for positive selection of a transformed cell comprising introducing into a responsive cell at least one CHD polynucleotide or at least one CHD polypeptide to produce a transformed cell, growing the transformed cell to produce a transformed embryo, and selecting for the transformed embryo.

20. The method of claim 19 further comprising introducing a gene of interest into the transformed cell.

21. The method of claim 19 further comprising altering media components to favor the growth of the transformed cell.

22. The method of claim 21 wherein the media components are altered to reduce somatic embryogenesis in non-transformed cells.

23. A method for inducing apomixis in a plant cell comprising introducing into a responsive plant cell at least one CHD polypeptide or at least one CHD polynucleotide to produce a transformed plant cell and growing the transformed plant cell under conditions sufficient to produce a transformed somatic embryo.

24. A method for increasing transformation efficiency comprising introducing at least one CHD polypeptide or at least one CHD polynucleotide and transforming with a gene of interest into a responsive host cell to produce a transformed cell and growing the transformed cell under cell growing conditions.

25. The method of claim 24 wherein the transformation is conducted in medium that retards growth of somatic embryo growth in non-transformed cells.

26. The method of claim 25 wherein transformation is conducted with reduced levels of auxin or no auxin.

27. The method of claim 24, wherein the host cell is from a monocot or a dicot.

28. The method of claim 24 wherein the host cell is a maize inbred plant cell.

29. A method for increasing recovery of regenerated plants comprising introducing into a responsive plant cell at least one CHD polypeptide or at least one CHD polynucleotide to produce a transformed plant cell and growing the plant cell under conditions sufficient to produce a regenerated plant.

30. A method for decreasing gene silencing comprising stably transforming at least one CHD polynucleotide or CHD polypeptide and a gene of interest into a host cell to produce a transformed host cell and growing the transformed host cell.

31. A method for increasing oil production in a host cell comprising stably transforming a host cell with a CHD polynucleotide operably linked to a promoter to produce a transformed cell and growing the transformed cell to produce elevated levels of oil in the transformed cell compared to a corresponding non-transformed cell.

32. An isolated nucleic acid expressing a protein having CHD activity comprising a member selected from the group consisting of:

(a) a polynucleotide which encodes a polypeptide of SEQ ID NO: 43;

(b) a polynucleotide comprising at least 60 contiguous bases of a coding region of SEQ ID NO: 42, said coding region being bases 343 to 4332;

(c) a polynucleotide having at least 75% sequence identity to bases the coding region of SEQ ID NO: 42, wherein the % sequence identity is based on the entire sequence of the above sequences and is determined by GAP 10 analysis using default parameters;

(d) a polynucleotide comprising at least 75 nucleotides in length which hybridizes under high stringency conditions to a polynucleotide having the coding region of SEQ ID NO: 42;

(e) a polynucleotide having the coding region of SEQ ID NO: 42; and

(f) a polynucleotide complementary to a polynucleotide of (a) through (f).

33. The isolated nucleic acid of claim 32, wherein the polynucleotide is from a monocot or dicot.

34. A vector comprising at least one nucleic acid of claim 32.

35. An expression cassette comprising at least one nucleic acid of claim 32 operably linked to a promoter.

36. A host cell containing at least one expression cassette of claim 35.

37. The host cell of claim 36, wherein the host cell is a plant cell.

36. A transgenic plant comprising at least one expression cassette of claim 35.

37. A transgenic seed from the transgenic plant of claim 36.

38. The transgenic plant of claim 36, wherein the plant is corn, soybean, sorghum, wheat, rice, alfalfa, sunflower, canola, cotton, or turf grass.

39. A transgenic seed from the transgenic plant of claim 38.

40. A method for modulating CHD activity in a plant, comprising:

(a) transforming a plant cell with at least one expression cassette of claim 35 and

(b) growing the transformed plant cell with a change in CHD activity, wherein said change in CHD activity is determined when said CHD activity of the transformed cell is compared to CHD activity of a corresponding non-transformed cell.

41. The method of claim 40 wherein CHD activity is reduced.

42. The method of claim 40, wherein the plant cell is from a monocot or a dicot.

43. A plant produced by the method of claim 40.

44. A method for transiently modulating the level of CHD activity in host cells comprising transforming host cells with a gene of interest and introducing at least one CHD nucleic acid of claim 32 to said host cells wherein CHD activity is transiently modulated.

45. An isolated protein having CHD activity comprising a member selected from the group consisting of:

(a) a polypeptide comprising at least 20 contiguous amino acids of SEQ ID NO: 43;

(b) a polypeptide comprising at least 80% sequence identity to SEQ ID NO: 43, wherein the % sequence identity is based on the entire sequence of the above sequences and is determined by GAP 10 analysis using default parameters;

(c) a polypeptide encoded by a nucleic acid of claim 30;

(d) a polypeptide having the sequence set forth in SEQ ID NO: 43.

46. An isolated ribonucleic acid sequence encoding a protein of claim 45.

47. A method for transiently modulating the level of CHD activity in host cells comprising transforming host cells with a gene of interest and introducing at least one CHD polypeptide of claim 45 to said host cells wherein CHD activity is transiently modulated.